広島大学現代インド研究 ― 空間と社会　Vol.11: 21–37, 2021
Journal of Contemporary India Studies: Space and Society, Hiroshima University

論説 Article

Characteristics and Challenges of Formal Agricultural Credit in Afghanistan: What Potential Policy Can Increase Participation?

Masaood MOAHID * **and Keshav Lall MAHARJAN** * *

Abstract: Access to credit improves farmers' productivity and income. However, farmers' low access to credit remains a confounding issue in Afghanistan. This study predominantly aims to identify the challenges hindering the country's financial sector from effectively serving agriculture. We used the triangulation method of data collection to capture the various dimensions of the challenges to formal agricultural credit access in Afghanistan. The results showed that commercial banks are reluctant to provide credit for agricultural purposes. Financial institutions supply credit to farmers in a fragmented manner, rather than through a unified mechanism. Furthermore, farmers cited the cumbersome process of obtaining credit and the lack of suitable collateral for it as the most pressing issues. Moreover, a thematic analysis of key respondents' interviews revealed that vulnerability to risk, operational restrictions, societal constraints, and the less active real estate market are the predominant challenges to expanding formal agricultural credit. Finally, we present our suggestions to address these challenges.

Keywords: formal agricultural credit, characteristics, challenges, thematic analysis, Afghanistan

I Introduction

The agriculture sector is the backbone of Afghanistan's economy and economic development (Muradi and Boz, 2018). It makes about 23 percent of the GDP (gross domestic product). Furthermore, the sector has much importance in earning foreign currency; over 80 percent of the country's exports are agricultural commodities. Agriculture also plays a vital role in ensuring food security in the country. It provides most food for the people and is the primary source of livelihood for the forty-four percent of households (NSIA, 2019).

In the past two decades, there has been significant attention to developing the country's agriculture sector. The Afghan Government, along with its donor partners, implemented various programs and projects for its agriculture sector growth. These development activities were focused on bringing commercialization opportunities and technical change into agriculture. These programs have achieved a number of successes, especially in the horticultural sub-sector, such as the increment in the production of vegetables, commercial potato, spices (particularly saffron), and temperate fruits to some extent, has increased farmers' income (Pain, 2019).

However, the country's agriculture sector is still characterized by low productivity, low income, and subsistence farming; about half the farmers produce for their consumption. They can barely market their produce (World Bank, 2018). Besides, a vast agricultural land (9.6%) is left fallow (CSO, 2014). These are primarily due to farmers' limited or no access to capital. Furthermore, the sector is producing below the potential (Muradi and Boz, 2018). These problems have caused Afghan farmers to be trapped in the vicious cycle of poverty. The poverty traps arise chiefly from inadequate access to productive assets particularly capital; low farm productivity; low levels of human capital; poor infrastructure; and underdeveloped market systems (Akenbor, 2015). Therefore, developing the agriculture sector of the country continues to be a crucial policy challenge in Afghanistan.

A vast amount of literature recommends access to credit to the operation of agricultural production. It

* Faculty of Agriculture, Nangarhar University
** Graduate School of Humanities and Social Sciences, Hiroshima University

improves farmers' productivity and income as it lightens capital restraints (Reyes and Lensink, 2010; Castro and Taxeira, 2012; Pearce, 2004; Hartarska et al., 2015). According to Foltz (2004), access to credit expands access to the needed inputs required for production. Low access to credit is a barrier to the agricultural production process, disrupting the procurement of improved inputs (Abdallah, 2016a). Low access to formal credit is one of the central factors responsible for the inadequate performance of agriculture (Masaood and Maharjan, 2020). Gashayie and Singh (2015) mention that access to credit by farmers is as crucial as always. Akenbor (2015) argues that agricultural credit is instrumental in breaking the poverty trap. As per Bashir and Azeem (2008), although credit is not a direct means of production, it helps transform subsistence farming into a more commercialized system. The vicious cycle of poverty shatters when a timely and sufficient credit is injected to it (Akenbor, 2015; Mosley, 2006). It spurs the adoption of new technologies by eliminating capital restrictions.

Given this, the Afghan Government and its donor partners have intervened in Afghanistan's rural areas to improve credit access. After the new Government's onset in 2001, several initiatives were launched to increase credit access, such as the formation of credit unions, microfinance, and other financial institutions (e.g., the Agricultural Development Fund). Besides, following the ratification of the new banking regulation in 2003, the commercial banking developed. Currently, several banking and non-banking financial institutions are functioning in the country. All these financial institutions are registered with the Government and function under specific laws and regulations. Therefore, in this study, formal agricultural credit refers to the credit offered by formal financial institutions regulated by laws.

However, despite considerable efforts to streamline, expand, and formalize the credit system, the success falls short of proclamations, plans, and programs. The formal financial sector of Afghanistan ignores the masses of farmers. Consequently, access to formal credit by farmers remains low. For instance, in 2018, only around 37,000 farmers participated in formal credit (MISFA, 2018). Besides, the coverage of formal credit remains meager over the years, i.e., only four percent of farming households participated in formal credit in 2008 (Hussain, 2009). It decreased to 3.1% in 2018 (MISFA, 2018). This situation has led to a massive mismatch between the supply and demand for formal agriculture credit in Afghanistan. According to the Agricultural Development Fund (2019), the country's demand for agricultural credit was 131.1 billion AFN[1)] in 2017. However, the total amount of disbursed credit to the agricultural sector was only 6.18 billion AFN, of which most parts went to commercial farmers and agribusiness companies.

Farmers need funds to purchase indispensable farming inputs. However, most farmers remain unbankable and money-wise expelled in the country - distressing the socioeconomic status of the vast majority of small and poor farmers. Due to the restricted formal credit for farmers, informal credit remains the dominant credit source for farmers. According to NRVA (2005), 42% of households in Afghanistan's rural areas relied on informal credit. Informal credit lenders do not provide credit in a well-defined way. Their credit is often costly to people – detrimental for economic development (Manig, 1999; Rajeev and Deb, 1998). Hence, this study attempts to determine the challenges that keep the country's financial sector from serving agriculture effectively and policies to alleviate these restrictions. This study also focuses on the characteristics of formal credit for agriculture and its historical perspectives in the country.

The primary motivation behind this study is that, to the extent of our knowledge, no study has analyzed how formal agriculture credit is constrained in Afghanistan's context. Owing to the socioeconomic differences, the studies of other contexts may not suit the country's situation. Furthermore, extant literature partly investigates the challenges of agricultural credit. No study on the developing countries thoroughly assesses how formal credit is restricted for farmers. This study analyzes the challenges from different dimensions that hamper the expansion of agricultural credit. More specifically, we analyze the challenges of agricultural credit from three aspects: analyzing gaps in the regulatory system, challenges perceived by farmers while using formal agricultural credit, and the challenges faced by financial institutions in lending to farmers. We also present our insight to address these restrictions.

The specific objectives of this study are:

- To analyze the characteristics of formal agricultural credit in Afghanistan.
- To identify the challenges that keep the formal

financial institutions of Afghanistan from serving agriculture effectively.

This paper is structured as follows: the subsequent section presents the literature review. Section III explicates our data and discusses the methods used, followed by a presentation of the results in Section IV. Finally, Section V concludes the paper.

Ⅱ Literature review

1 Features of the formal agricultural credit markets

Compared to other markets, due to imperfect and costly information, credit markets often operate imperfectly. Credit markets create profits in sanctioning credit. Credit is the cash exchange for a commitment that the cash will be returned in at some specific point of time in the future. The commitment is often supported with some supplementary stipulations such as the covenants, collateral, and guarantors. However, the borrowers sometimes fail to hold the promise. Therefore, financial institutions opt for more rigorous screening. Thus, they ration their applicants to realize who is more likely to reimburse the installments (Dowd, 1992). Additionally, there are two further problems, moral hazard and adverse selection. Adverse selection is when a person with a high likelihood of default is most likely to seek credit (Hollinger, 2011; OECD, 1999; Jia, 2008). Moral hazards happen when the credit is diverted from the purpose it has initially been obtained to any other purpose (Repullo and Suarez, 2000). Moral hazard is more troubling if the credit diversion is from productive purposes to unproductive purposes.

The imperfection in the formal credit market augments when formal financial institutions provide credit in rural areas. Because rural areas are characterized by poverty, low density of population, high-income inconstancies, high risk, and the dominance of farming as a source of livelihood. All these problems increase transaction costs and make the credit market more imperfect.

In addition to the challenges of financial intermediation in general and financial intermediation in the rural areas, the distinct peculiarities of agricultural credit make agricultural credit different from the credit supplied to other sectors. This is due to the seasonality and the systematic risk intrinsic to the agriculture sector. The production of crops and livestock creates a time lag in production, which originates seasonality in the agricultural production process. Agricultural production is also subjected to the haphazard impact of weather, pests, and diseases-beyond an individual farmer's control. This put the farmers in a distressful situation of systematic risk. Furthermore, Jia (2008) states that the condition of rural infrastructure, the presence and quality of research and extension, and the existence of a well-functioning court system affect farmers' access to credit.

Poverty level is very high in Afghanistan and most poor live in the rural areas (NSIA, 2019). According to Banerjee and Duflo (2007), formal credit provision can help rural people escape poverty. Akenbor (2015) found a significant relationship between financial inclusion and poverty in Nigeria. The poverty trap is a situation where basic needs, such as food, clothing, and shelter, are lacking. It occurs when a household cannot meet its basic necessities. Poverty traps endure primarily in rural, agricultural-based, and low-labor productivity regions (Akenbor, 2015; Mosley, 2006). The poverty traps arise chiefly from inadequate access to productive assets particularly capital; high dependence on agriculture; low farm productivity; low levels of human capital; poor infrastructure; and underdeveloped market systems. The poverty trap self-reinforce itself and lets poverty to endure. If it remains from generation to generation, the trap starts to strengthen itself if steps are not taken to shatter the cycle (Costas and Stachurski, 2005). Agricultural credit provision increases farmers' productivity and income, thus it should be instrumental in breaking the poverty trap.

2 Challenges faced by farmers in utilizing formal credit

Diagne (1999) and Doan et al. (2010) categorize the challenges to agricultural credit as "demand-side challenges" and "supply-side challenges." The demand side challenges are inherent to farmers, such as low education, low resource endowment, and societal norms, resulting in low credit participation. The supply-side challenges are the challenges that make it difficult for financial institutions to offer timely and enough credit to farmers. Supply-side challenges can impede access to credit.

All these problems generate non-voluntary credit exclusion and voluntary credit exclusion. A non-voluntary

credit exclusion happens when there is no right credit arrangement for farmers or when the farmers are too poor to participate in credit, although the credit is available for them. Voluntary credit exclusion occurs when the credit is available. However, people do not have the willingness to participate because of negative thoughts or experiences of participating in credit (Mohammed and Uraguchi, 2017). For example, utilizing a conventional interest-based credit is not allowed in Islam. Therefore, this religious belief causes voluntary exclusion in Muslim majority countries. According to Kim et al. (2018), peoples' participation in formal credit in the Muslim majority countries is low.

The extant literature on agricultural credit is mostly focused on the impact of access to formal agricultural credit on farmers' production and income. Due to the various issues specific to agriculture, which are difficult to mitigate, access to and participation in credit pose serious challenges. However, a few studies examine the challenges that exist to the formal agricultural credit. For example, Dhakshana and Rajandran (2018) use the data from 205 farmers in India's Cauvery Delta region to analyze the farmers' challenges while utilizing formal credit for agriculture. They found that the repayment conditions, lack of collateral, higher interest rate, and the stringent procedure were the main challenges. Ayegba and Ikani (2013) utilize the data from 300 farmers in Nigeria to determine the farmers' difficulties in accessing credit. They affirmed that the main challenges were the high interest rates, the lengthy procedure of loan approval, and overemphasizing on guarantors and collateral. Asogwa et al. (2014) analyses 130 farmers' data to investigate their access to credit and the challenges in accessing credit. He found that the delay in the approval and lack of collateral were the main challenges in agricultural credit in Benue district, Nigeria. Admasu and Paul (2010) found that an inadequate amount of credit and default due to the lack of farmers' awareness in Ethiopia are mainly restricting agricultural credit. Vincent et al. (2011) analyze the challenges to farmers in accessing formal credit. He found the lack of collateral and low awareness as central challenges to agricultural credit.

The conclusions of these researches differ from context to context. Furthermore, most of these studies partially analyze what challenges restrict formal financial institutions to serve the agriculture sector better and what challenges the farmers face while utilizing formal credit for their agricultural activities.

Ⅲ Methodology

1 Data

We use the triangulation of data collection methods that uses more than one way of data collection. The methods combine qualitative and quantitative data to capture different dimensions of the challenges to agricultural credit in Afghanistan. The triangulation of data collection methods helped to understand the characteristics of formal agricultural credit and the various factors that hinder formal agricultural credit. However, it also helped to understand the historical context within which formal agricultural credit evolved in Afghanistan.

At first, 13 policy documents and reports, which are most relevant to formal agricultural credit in Afghanistan, were reviewed to understand credit characteristics and identify the gaps that require improvement. It also helped us know about the historical perspectives of formal agricultural credit and its evolution. The list of policy documents and reports is shown in Table 1 in the results and discussion section.

To analyze the challenges farmers face in availing formal credit, 94 farmers who participated in formal credit for their agricultural purposes between 2016 and 2018 were randomly selected in the three districts of Afghanistan. The districts are Behsood, Paghman, and Balkh, with an estimated rural population of 126,262, 111,638, and 124,508, respectively (Central Statistics Organization, 2018). Behsood district is in Nangarhar province, Paghman district is in Kabul province, and Balkh district is situated in the Balkh[2)] province. These districts were chosen given the prominence of farming in the livelihood and the farmers' accessibility to formal credit. The three districts are located in three different regions of Afghanistan, namely, Northern, Central, and Eastern regions. Three to four villages were randomly selected in each district. Finally, 98 formal credit users were randomly assigned to the sample. However, the data of ninety-four formal credit users farming households were usable in the sample for analyzing the challenges they face in using formal agricultural credit. The rest were incomplete. Figure 1 shows the three districts.

To come up with the challenges to the expansion of

Table 1 Policies and reports reviewed to understand the characteristics of formal agricultural credit in Afghanistan

Policy/Report	*Organization/Institution*	*Year*
The first five-year plan of Afghanistan 1956−1961	The Royal Government of Afghanistan	1956
Agricultural Credit Project of Afghanistan	International Bank for Reconstruction and Development	1970
Agricultural credit in Afghanistan: a review of progress and problems from 1954 until 1972	Norvell, D. G.	1972
Afghanistan National Development Strategy	Islamic Republic of Afghanistan	2005
The Financial Sector in Afghanistan Managing the Post-conflict Reform Process	World Bank	2005
Afghanistan National Development Strategy A Strategy for Security, Governance, Economic Growth & Poverty Reduction (2008 – 2013)	Islamic Republic of Afghanistan	2008
A Critical Assessment of Microfinance in Afghanistan	Afghanistan Public Policy Research Organization	2008
State of Microfinance in Afghanistan	Institute of Microfinance project on State of Microfinance in SAARC Countries	2009
Agriculture & Rural Development Sector Strategy	Government of Islamic Republic of Afghanistan	2008
Banking Law of Afghanistan	Islamic Republic of Afghanistan	2016
Revitalizing Agriculture for Economic Growth, Job Creation and Food Security	The World Bank and the Government of Islamic Republic of Afghanistan	2014
National Comprehensive Agriculture Development Priority Program 2016 – 2021	Government of Islamic Republic of Afghanistan Ministry of Agriculture, Irrigation and Livestock	2016
Microfinance Investment Support Agency, Annual Report	MISFA	2018

formal agricultural credit, 22 key informants were purposefully selected for interviews in the three cities, Kabul, Jalalabad, and Mazar. The interviewed key informants consisted of ten officials of the different financial institutions and 12 experts of the related field (four economists and financial intermediation specialists, five agricultural development specialists, and three academics). Therefore, the key informants' data also include the challenges faced by formal financial institutions in lending to farmers. The data from interviews with all these stakeholders were utilized in doing qualitative analysis. Figure 1 also shows the three cities where the key informants were interviewed.

2 Analytical methods

The Friedman test was used to analyze and rank the farmers' challenges in utilizing formal credit. The test uses the rank information of the data. It compares the mean rank among the related groups and indicates if the group differed significantly or not (Gravetter et al., 2016 p.698). The farmers were asked to rank a group of six challenges they faced while using formal agricultural credit. The challenges were identified based on the literature review on the related topic and three case studies done before the three different districts' survey.

Our data suit the assumptions of the test. We have used a 5-point scale, where 'one' denotes strongly disagree, and 'five' strongly agree. The dependent variable is the depth of the farmers' problems, and the independent variables are the six listed problems.

This test uses the hypothesis of an identical population, so our null hypothesis is that the mean rank of all the problems is not different from each other. We selected the level of significance 0.05 as our sample was neither so large nor so small. Formulation of the hypothesis is as follow:

H_0: $CH_1=CH_2=CH_3=CH_4=CH_5=CH_6$

H_1: Not all means are equal

Level of significance: $\alpha= 0.05$

Friedman's test tells whether there are overall differences among the groups. However, it does not determine which groupings vary from each other. To do this, a post hoc test is necessary. We have selected the Wilcoxon signed-rank test, which is used to compare two means (Meek et al., 2007). As we conduct this test for multiple combinations (15 combinations), we need Bonferroni adjustment on the results we get from the Wilcoxon tests. If we do not implement this adjustment, we will face a Type I error. For Bonferroni adjustment, we take the significance level we were initially using (0.05) and divide it by the 15 combinations. We now have a new significance level of 0.05/15 = 0.0033. This implies that if the *p*-value is higher than 0.0033, we cannot come up with a statistically significant outcome in comparing the means of two challenges.

Thematic analysis was used to identify the main themes from the interaction with key respondents, which took place during the interviews. This allows an in-depth description of patterns in the data to be identified (Attard and Coulson, 2012). Transcripts of the interviews were read many times to ensure accurate understanding. Patterns within the data were coded, and passages from the original data were gathered into non-overlapping themes and subthemes.

Ⅳ Results and discussion

1 Historical overview and characteristics of formal credit for agriculture in Afghanistan

Appropriate policies are vital for effective and inclusive agricultural credit (Saqib et al., 2018). Therefore, it is essential to scrutinize the policies and programs of formal agricultural credit in Afghanistan. The first five-year plan, devised in 1956, is the first policy document to integrate agricultural credit in its profile. After the formation of the new government in 2002, agricultural credit is somehow reflected in various policy documents (e.g., Afghanistan National Development Strategy, Agriculture & Rural Development Sector Strategy, and National Comprehensive Agriculture Development Priority Program) (Table 1.).

The documents and the reports show that there are

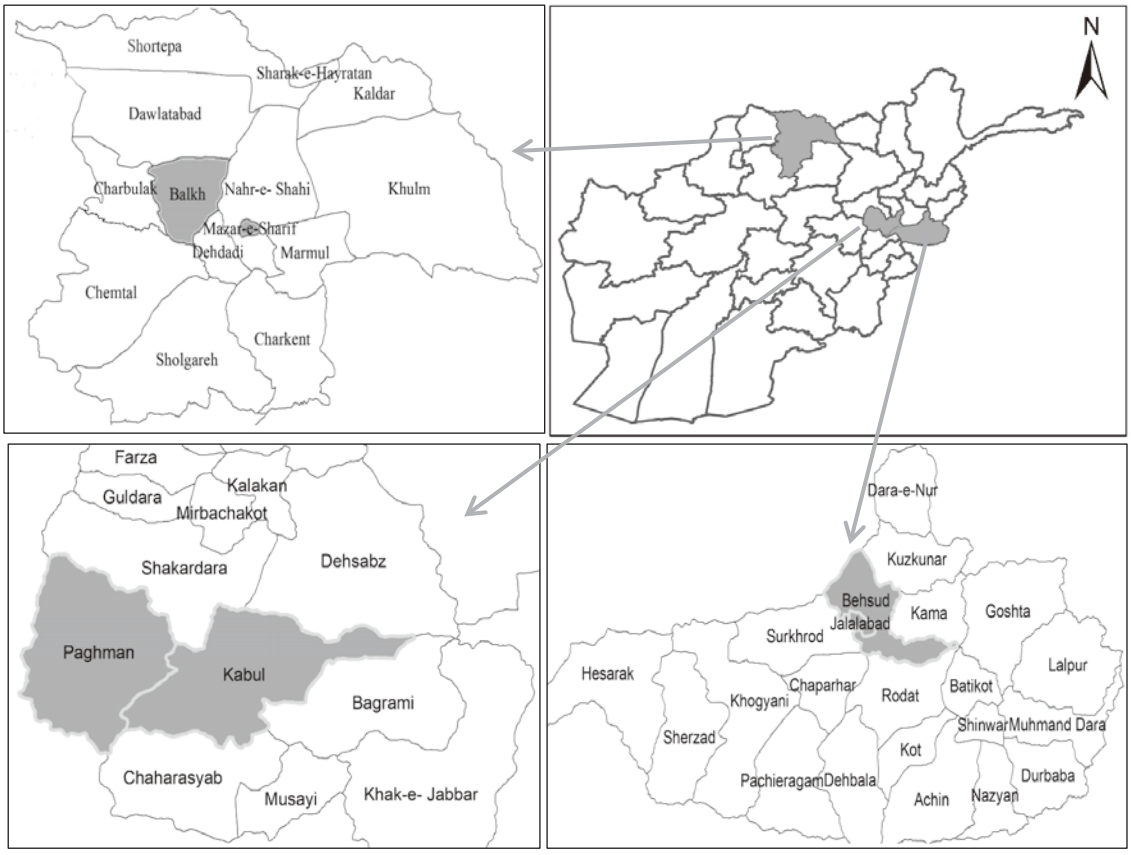


Figure 1 Study area

Source: Authors.

mainly three historical perspectives for formal agricultural credit in Afghanistan: pre-gap era, a gap in formal credit, and post-gap era. They also show two approaches to formal agricultural credit, new and old, consistent with the worldwide development of agricultural and rural credit. Both approaches mainly aim to enhance the income of farmers and curb poverty. However, they diverge in notable features such as working assumptions and state responsibilities. The old approach is based on the governments' direct interventions, control, and concessionary credit for agriculture. However, the new approach reflects financial liberalization, including creating a favorable policy environment while minimizing direct government intervention in agricultural lending (Yaron, 2004).

Formal credit for agriculture in Afghanistan started in 1954 by establishing the government-owned ACIB. The bank aimed to advance agriculture sector in the country and decrease farmers' dependency on informal credit. The bank sanctioned loans to many farmers with concessionary interest rates. However, given the lack of proper loan evaluation, screening process, and capacity, the bank hardly achieved self-sufficiency (Norvell, 1973). In 1969, ACIB was converted to the Agriculture Development Bank. The new bank revised the loan appraisal procedure and started with a flexible lending policy, resulting in increased performance. The ADB would disburse credit directly to farmers and cooperatives. Apart from providing credit, the bank, with the help of cooperatives, provided farmers' education programs to increase credit effectiveness. The credit increased the availability of agricultural equipment in the country. However, the bank's credit was inadequate and biased toward large farmers, tending to neglect poor farming households (Gibbs, 1986).

Along with ADB, five other state-owned banks also actively operate in the country and provide loans to other sectors.

The Soviet occupation halted formal credit and development activities following the civil war. The six state-owned banks became inactive and were barely operational during the war. The development activities in the country were negligible (Hussain, 2009). Without formal financial activities, farmers depended on the informal financial sector to meet the demand for financial services, including funding agricultural activities in rural areas. This period is the gap era in the formal credit provision for agriculture. In the gap era, the country's Islamization, which is linked with providing financial services and subsequently influences the country's financial sector, is notable. Figure 2. depicts the historical perspectives and the characteristics of formal agricultural credit in Afghanistan.

The new approach of providing formal agricultural credit, as mentioned earlier, is based on financial liberalization, consistent with the economic liberalization process and policies implemented by states. This approach assumes that financial liberalization and deregulation lead to the high growth of developing countries, savings, and efficient capital use. It also assumes non-subsidized financial services are essential tools for growth and poverty reduction. Therefore, the new approach responds to the old approach's failure, which many developing countries implemented in the 1980s (United Nations, 2009). However, Afghanistan's financial sector was reactivated with the new approach after the new government was formed in 2001. Hence, Afghanistan lags in applying the new approach for around two decades. Private commercial banks, non-governmental organizations, and donor-funded microfinance institutions emerged. They functioned without direct intervention and control from the government.

In the post-gap era, financial institutions provide credit to farmers in the country via three channels. The first channel comprises commercial banks, supervised by the central bank. Twelve licensed banks operate in the country. The second channel comprises microfinance institutions, regulated by the MISFA, an apex organization of microfinance institutions in Afghanistan. MISFA coordinates donor support and boosts international and local non-governmental organizations' entry into the sector to expand credit access. Microfinance institutions operate in the rural and urban areas of Afghanistan. The third channel comprises other non-banking financial institutions, particularly ADF, initially a donor-funded organization that reports to the Ministry of Agriculture, Irrigation, and Livestock. The ADF targets commercial farmers and agribusinesses. It gives credit to farmers in an indirect or two-tier way. ADF mainly provides credit via cooperatives and associations.

Therefore, formal agricultural credit provision in

the country occurs in a more fragmented manner. A single mechanism to channel credit to the farming sector does not exist. Financial institutions lack coordination in credit provision for the farming sector. No clear, unified policy exists for formal agricultural credit, followed by all financial institutions. Furthermore, banking laws, policies, and reports of commercial banks show that the legal and regulatory frameworks for financial activities do not adequately consider the specificity of agriculture credit. Central bank laws and regulations do not prioritize lending to the farming sector. Commercial bank reports suggest that banks are reluctant to supply credit in the remote rural areas and for agricultural purposes. Although seven of 12 banks incorporate agricultural credit in their policies, the percentage of loans disbursed by commercial banks to agriculture is low. Commercial banks are indispensable because the bulk of financial resources circulate through them in Afghanistan. Without them, reaching many farmers by other financial institutions will be challenging.

However, the coverage and scale of operation of the non-bank financial institutions are shallow. For example, the ADF, the leading financial institution with an agricultural funding approach, functions only in six of 34 provinces. Non-bank financial institutions also face sustainability issues. Parto and Regmi (2008) state that microfinance institutions in Afghanistan struggle with financial sustainability. Per Kinde (2012), the high cost of such sustainability is concerning for non-bank financial institutions.

Policy documents under the new approach are ambitious. However, they rarely reflect the country context. For example, according to Yaron (2004, p. 140), under the old approach of agricultural credit, underinvestment in rural infrastructure (e.g., roads) and human resources (e.g., education) is acceptable. However, these are necessary for the new approach, as these positively affect social and geographical proximity to the financial institutions. Afghanistan struggles with rural infrastructure (Blumenstock et al., 2018). Similarly, the education level is low in rural areas. These factors affect the outreach of financial institutions in rural areas. Therefore, the pre-conditions to favor strong credit growth under the new approach are not in place.

Finally and importantly, the religious aspect of formal credit is evident from the policy documents and reports. Considering the socio-cultural context of Afghanistan, where most people are Muslim, religious constraints are crucial deterrents to conventional formal agricultural credit participation. Islamic banking and finance were ignored during the formation of financial institutions after the establishment of the new government

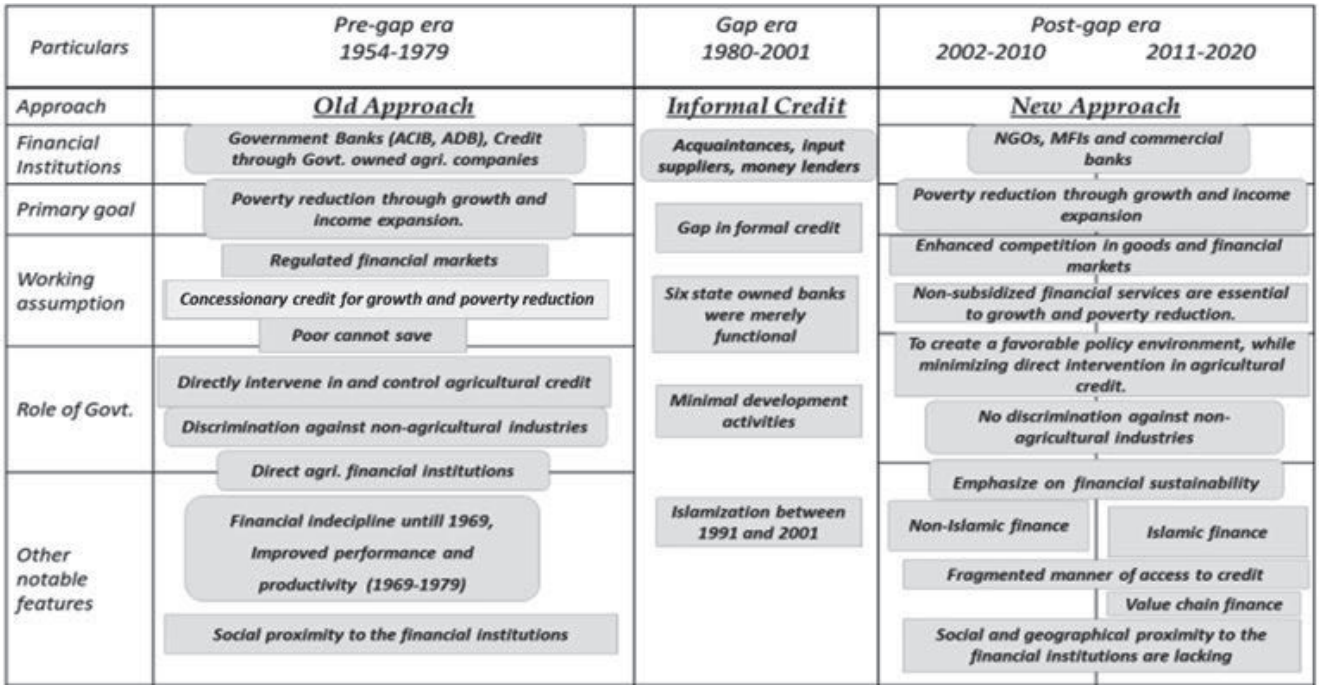


Figure 2　Characteristics of formal agricultural credit in Afghanistan
Source: Author's summary based on the review of policy documents and reports listed in Table 1.

in 2001. Nonetheless, it has recently been introduced into the banking sector of Afghanistan. The country's banking law integrated Islamic banking in 2014. Out of 12 banks, one full-fledged Islamic bank and six Islamic sections in conventional banks operate (DAB, 2015). Other non-bank financial institutions partly provide Islamic credit. However, the dominant mode of credit is conventional credit.

Figure 2. is a snapshot that reveals the formal agricultural credit historical perspectives and characteristics in Afghanistan.

2 Challenges faced by farmers in using formal credit

Table 2 reveals the descriptive statistics of the households. In terms of education, farmers have a lower education level (7.14 years). The literacy rate is commonly low in Afghanistan-owing to the long-lasting war and instability following the Soviet invasion in 1980. According to Central Statistics Organization (2018), the literacy rate for adults is only 34 percent and for youth is 52 percent in Afghanistan. In our sample, 39.8 percent of the family heads were not ever educated formally. Although most households are smallholders, the farmers had, on average, 6.38 Jeribs[3)] of agricultural land. The mean land size in Afghanistan is 5.1 jeribs (Central Statistics Organization, 2018). The land is considered as a significant contributing factor of household financial behaviors. The mean distance from the cities is 10.1 km. The average agricultural experience of the farmers is 22 years. About 26 percent of the farmers were getting non-farm income (Table 2).

Figure 3 displays the results of the Friedman test. It shows that overall, the various six challenges ranked by farmers are significantly different from each other. It also reveals that the difficulty in providing collateral/guarantor and the cumbersome process of obtaining credit are the two highly ranked challenges. These challenges are explained in detail in the next sub-section. They were cross validated in the analysis of interviews with key informants.

The results of the Wilcoxon Signed-Rank Tests, which were conducted for the pairwise comparison of the challenges faced by the farmers, show that, in general, the first two highly ranked challenges shown in Figure 3 are statistically different from the last three challenges, which were ranked low. Furthermore, the first two highly ranked challenges are not statistically different between each other, so they are equally important for consideration. Moreover, distance and unsuitable repayment conditions are not significantly different from each other.

3 Challenges to the expansion of formal agricultural credit in Afghanistan

Figure 4. provides a glimpse of how formal credit is constrained in Afghanistan. Five themes emerged from the interview analysis. These themes are challenges to the expansion of agricultural credit in the country. They are discussed one by one as follows.

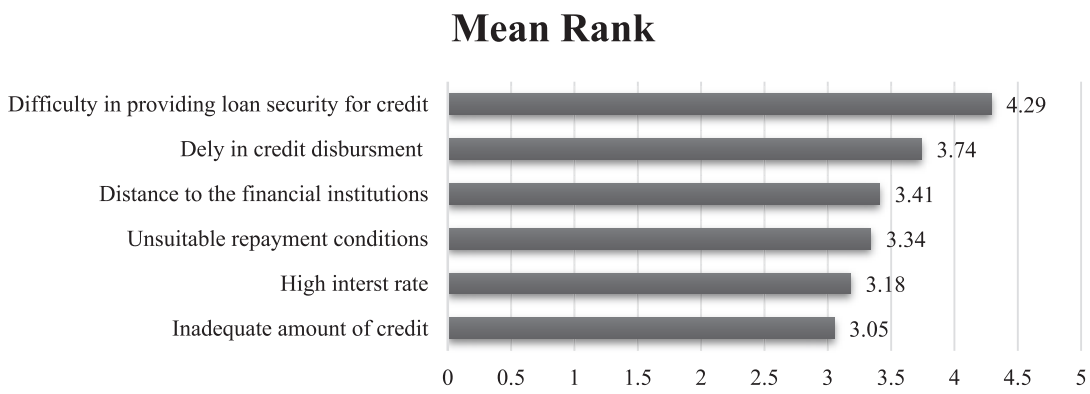
i High vulnerability of farmers

Farmers' vulnerability is higher in the country, influenced by their exposure to systematic risk in agriculture (i.e., the production and marketing risks). Production risk arises due to climate-related disasters and pests. Most respondents opined that the agriculture-based

Table 2 Descriptive statistics of the farmers who obtained formal credit

Socioeconomic characteristics	Mean	SD	Max	Min
Education (years)	7.14	5.90	17	0.0
Farm size (Jeribs)	6.38	4.32	19	0.8
Distance from the city/town (km)	10.10	3.57	19	5.0
Farming experience (years)	22.00	11.37	50	3.0
Access to extension (% access)	78.80	–	1	0.0
Non-agricultural income (% yes)	26.20	–	1	0.0
Membership in farmers' association (%yes)	12.12	–	1	0.0
Registered land documents (% yes)	47.40	–	1	0.0
Livestock (% yes)	71.70	–	1	0.0

Note: 1 hectare is equal to 5 jeribs.



N	94
Chi-square	63.22
Df	5
P	0.000

Figure 3　Challenges faced by farmers in using formal credit

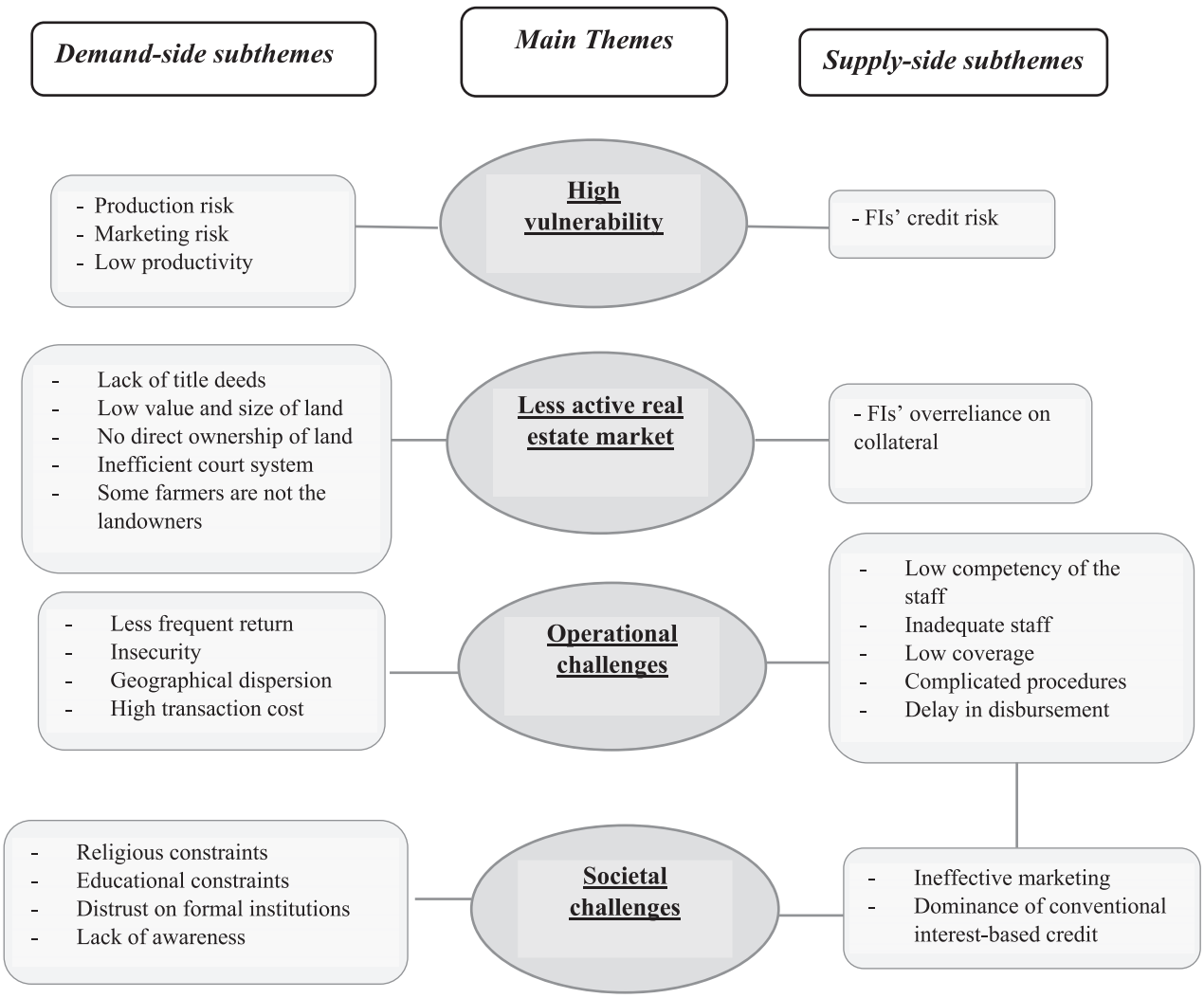


Figure 4　Thematic map of the challenges to the expansion of agricultural credit
Source: interviews, 2019.

livelihoods in Afghanistan are more susceptible to production risk and instabilities. Afghanistan is a mountainous country with an arid and semi-arid climate. Afghanistan is among the most vulnerable country to climate change. The most probable natural catastrophes in the country are drought and floods (Savage et al., 2009). The outbreak of pests is also an essential source of production risks. Additionally, with low access to capital, farmers cannot afford pesticides and pest control equipment. Farmers also lack adequate knowledge about effective pest control practices, such as Integrated Pest Management.

Price fluctuation in the country leads to market risk due to variations in local production and international trade problems. Changes in domestic agricultural output occur due to the glut of crops in the peak season, resulting in low prices.

Further, much of the country's agricultural produce, especially fruits and vegetables, are exported to India and Pakistan. The Pakistani border closes per the political tension, affecting prices in Afghanistan. Respondents said the border closed three times in 2018, thus making exports impossible. According to Pain (2019), demand for high-value agricultural products inside Afghanistan is low, resulting in a decrease in prices, thus discouraging farmers from obtaining formal agricultural credit due to low repayment confidence levels. Moreover, given the price fluctuation of agricultural produce, input price volatility is also a source of risk. Per the respondents, when the prices of inputs increase, farmers' net profit decreases, affecting their repayment capability. Input price volatility exists more in the livestock subsector, which increases the risk when combined with the market and production risk.

Lenders' credit risk emerges from farmers' vulnerability. To mitigate the risk, they either avoid lending to farmers or enforce stringent conditions before granting credit. According to the financial institutions' officials, agriculture is a risky business in Afghanistan. It is challenging for farmers and financial institutions to predict unfavorable times in their farming activities. Farmers cannot produce per their plan. In some cases, production decreases such that products cannot recover costs. Thus, the risk mitigation measures are rational for financial institutions. According to the World Bank (2018), systematic risk is a significant deterrent for commercial banks in Afghanistan for lending to the agriculture sector.

A higher risk increases the importance of insurance for the agriculture sector (Llanto, 2007), which does not exist in Afghanistan.

The high vulnerability and risk in Afghanistan's agriculture sector demand a thorough and robust policy framework with formal credit policy complaints and farmer capabilities. According to Meyer (2011), due to risks and complicated agricultural features, the most successful agricultural finance resulted from "careful long-term institutional development."

Low productivity affects farmers' confidence and ability to repay; thus, they avoid formal credit. In Afghanistan, the productivity in farming is low due to subsistence farming, the inability to pay for inputs, and farmers' lack of farming and business management skills. Due to subsistence farming, other than food, farmers can barely provide for their families. They hardly apply improved inputs in their farms due to their low access to capital. Farmers only cultivate and rarely assess their investment with generated profits. Consequently, it decreases self-confidence in their capacity to repay the credit.

Vulnerability and low productivity relate to the overall development of the farming sector in Afghanistan. According to some respondents, there is a two-way relationship between agricultural credit and agricultural development. The growth in the farming sector should support agricultural credit. Gonzalez-Vega (2003) states that the macroeconomic and sector development policies are also crucial for agricultural credit sustainability.

ii Less active real estate market in the rural areas

Collateral has a critical role in obtaining credit for farmers. It increases a farmer's ability to get external financial resources. Financial institutions employ the pledging of assets as a strategy to screen a farmer's creditworthiness and decrease default risk (Akram and Hussain, 2008). The respondents opined that commercial banks in Afghanistan are not confident in lending without collateral. Moreover, farmers without title deeds for their land are not interested in credit. They believe that they will not be given credit without any registered collateral. However, in general, most rural credit in Afghanistan does not require collateral, thus decreasing participation in formal credit and increasing lenders' risk. Properties

without a clear title despite long-term occupancy are considered as “dead capital” (Bresnyan, 2004). Approximately 80% of the properties in rural areas of the country do not have title deeds in Afghanistan (NSIA, 2019). Apart from the low rate of title deeds, the land’s value and size in the farther areas are small. Bank officials hold that they require collateral with the value of at least 150 to 200% of the credit. Therefore, for a more substantial amount of loans, agricultural land collateral may not be sufficient.

Many farmers do not directly own land in Afghanistan. They jointly own it along with their siblings or other relatives. They have their property registered officially on their parents’ or grandparents’ titles since the transfer of title deed is a lengthy procedure. Due to the lack of a well-functioning court system in the country, the transfer requires an average of 155 days (MUDH, 2017). Thus, farmers are discouraged from transferring the title of their properties.

In some cases, farmers are not landowners. They continue their farming as sharecroppers. Sharecroppers cultivate a significant portion of agricultural land in Afghanistan (Maletta, 2007). In this case, a sharecropper cannot provide the collateral of the land he cultivates to secure credit. Sharecroppers need credit for working capital for the short to medium term.

Financial institutions also accept guarantees besides the sizable collateral. However, guarantees cannot adequately remove the credit constraints of the collateral-less cash-starved farmers. Providing a guarantor induces a farmer to depend on other people, as in obtaining informal credit. Banks and financial institutions also accept movable property, such as machinery, valuable equipment, and jewelry, as collateral. However, such a pledge is more feasible in urban areas. Farmers, especially smallholders, may not possess these assets. Small farmers usually possess livestock that cannot work as collateral for cash.

iii Operational challenges

This theme includes the frequency of investment returns, geographical dispersion, insecurity, high transaction cost, low capacity, and complicated procedure. Given the characteristics of the agriculture sector’s production process, farmers’ investment revolves periodically and infrequently, mostly twice or sometimes three times a year. For capital investment, the gains are significantly much lengthier. Longer credit maturities and installments are riskier for financial institutions, causing a liquidity management problem and increasing transaction costs for financial institutions. Moreover, farmers with no non-farm income do not go for credit if it does not match their cash flow. As discussed earlier, farming activities are prone to seasonality, better revealed in farmers’ cash flow. A slower investment turnover generates low profit relative to other sectors with quick capital flows. A prolonged credit maturity and variable installments are riskier and further challenges financial institutions, which must sanction seasonal loans with less frequent and irregular installments to meet the farmers’ cash turnover. Such turnover requires a robust loan assessment and monitoring mechanism, increasing the financial institutions’ transaction cost.

Geographical dispersion is an essential operational challenge. Rural areas in Afghanistan are described as scattering low-density communities with access and communication challenges and, hence, high costs of operation for production and marketing of agricultural produce and access to and delivery of financial services.

Insecurity hampers overall development, including access to credit. Financial institutions are reluctant to sanction credit in unsecured areas because they cannot operate smoothly. Such regions make loan appraisal and monitoring challenging. They also increase transaction costs. According to respondents, security constraints also trigger educated people to abandon rural areas. Educated people are the most likely to participate in formal agricultural credit. According to Kantor (2009), insecurity is not under the control of financial institutions in Afghanistan.

Low capacity is a supply-side challenge. Most financial institutions are small-sized, and their coverage is exceedingly low. Their offices and branches are located in cities; however, farming activities are rural. Out of 401 rural districts in the country, only four districts have formal financial institution offices that sanction loans to rural people and farmers. Further, their field staff, who process loans and conduct awareness programs, are inadequate. Moreover, the staff is low in competence, especially in agricultural finance and Islamic banking. Respondents believe that bank staff are more qualified in conventional banking and non-agricultural credit. No specific institution in the country trains people in Islamic

finance. Staff training by financial institutions to handle agricultural lending is inadequate. Financial institutions dealing with agricultural credit need professionals with adequate skills (Hollinger, 2011). Similarly, skillful professionals are also required for financial institutions that provide credit in compliance with Islamic banking (Ahmad and Hassan, 2007).

The respondents held that the credit disbursement procedure is complex and time-consuming. They used either of these descriptions: "delay in processing credit, procedural complication by the financial institutions" and "Long screening process." Borrowers get frustrated sometimes with the procedure and avoid credit since they must be present for many days at the financial institutions to obtain credit. Thus, they lose day wages and incur lunch and transportation expenses, making credit costly. Moreover, a delayed credit will not serve the desired purpose. Financial institutions' credit disbursement procedure is lengthy due to their rigorous screening procedure to ensure borrowers will not default. The lengthy process is also due to the complexity of attesting collateral in the court. This finding agrees with Dhakshana and Rajandran (2018), Ayegba and Ikani (2013), and Bashir and Azeem (2008).

iv Societal challenges

The societal challenges include religious constraints, educational constraints, and distrust of formal institutions. Islam prohibits conventional interest-based financial activities (Saqib, 2011). People in Muslim-majority countries have negative perceptions of conventional financial operations, including availing credit. Therefore, if the credit is interest-based (usury-based), it causes voluntary credit exclusion. All respondents opined to this. Masaood and Maharjan (2020) found that religious constraints were among the highest-ranked reasons for avoiding formal agricultural credit in Afghanistan. According to ADF (2019), farmers prefer Islamic credit in Afghanistan's rural areas. However, even though interest-based transactions are unpopular, the country's dominant formal agricultural credit is conventional credit. Respondents opined that Afghanistan's farming community is religious and traditionalistic; they value religion against their economic means. Even so, it is prudent to retain our religious values while achieving economic and agricultural development.

Many studies recommend Islamic credit (also called Sharia-compliant credit) for agriculture in Muslim countries (Saqib, 2011, Hassan et al., 2012; Saiti et al., 2018). Sharia-compliant credit can increase farmers' confidence in formal credit participation and their income and asset base (Hassan et al., 2012). Its purpose is similar to conventional credit, yet its various operational specifications vary in evading interest (usury) (Saqib, 2011).

Farmers are not aware of existing financial services and their offerings due to ineffective marketing activities of financial institutions. The government is also yet to build awareness for participating in credit. Hence, they rely on informal credit. The lack of financial awareness also decreases demand and the effective use of credit. Further, the distance of farmers from financial institutions also affects awareness. As noted earlier, the offices of formal financial institutions are in the cities. The lack of rural branches and financial institutions' field staff in remote areas decrease awareness.

Nevertheless, Islamic banking's lesser dominance is due to operational inefficiency by the lack of local experts in Islamic banking and finance. Financial institutions are dependent on foreign staff who are paid vast sums of money. Furthermore, people remain skeptical about Islamic banking and its products in the country. Islamic banking and finance have been newly introduced into Afghanistan (Safi et al., 2020). Per the respondents, farmers cannot readily differentiate Islamic from conventional banking. Further, expanding Islamic banking in rural areas requires effective marketing and awareness programs. However, per Safi et al. (2020), Islamic banking has been expanding in Kabul, the country's capital. Approximately 60% of bank users understand Islamic banking. However, their survey covers only urban areas—a high literacy environment.

Educational constraints are another crucial societal challenge, given the expansion of formal agricultural credit in the country. The farmers are illiterate and uninformed about financial management practices. As mentioned in the sub-section 4.2 of this section, the average year of education is approximately seven years. Furthermore, approximately 40% of farmers were illiterate and never attended any formal education. They hardly understand the procedural and other requirements for obtaining formal agricultural credit. They barely keep records of farming operations, making it challenging for

financial institution staff to assess their repayment capability accurately.

Moreover, they do not know how to utilize loans optimally. Higher capacity and human capital positively affect investment potential and the need for credit. Higher education of the farmers also increases farmers' technical efficiency (Abdallah, 2016b).

Distrust in formal institutions is also a societal challenge. Due to the torment and corruption of government bureaucracy, people try to avoid the government and formal institutions. There is also a misconception among the farmers about the commercial banks. They assume that commercial banks accumulate large profits and do not serve communities. Thus, they avoid bank credit. Mitigating this misconception is especially important, as commercial banks are essential in creating liquidity and providing credit for economic growth. This type of misconception and distrust leads to voluntary credit exclusion. Bizhan (2013) notes that people do not trust the Afghan government due to high corruption and a lack of transparency. Azimy et al. (2020) found that Afghan farmers do not prefer government institutions.

V Conclusion and policy implications

Formal agricultural credit is crucial for the development of the agriculture sector in Afghanistan. However, the flow of formal credit to the sector is deficient. The country's formal financial sector reactivated after 2002 by forming various financial institutions. Since then, the formal agricultural credit has been provided to the farmers in a fragmented manner through various financial institutions. Nevertheless, a unified regulatory mechanism to supervise all the formal agricultural credit activities does not exist. Furthermore, the financial institutions in the country function more in a financially liberalized way. The Government does not directly control these financial institutions. Commercial banks are reluctant to supply credit for agricultural purposes due to their risk-averse nature. The coverage of other financial institutions is too low to reach a significant number of farmers.

In the formal financial sector of Afghanistan, the conventional interest-based credit is dominant, which is prohibited in Islam. Consequently, people negatively perceive formal credit in the country. After the Islamization in the country in the 1990s, the religious aspect of financial activities became especially important. However, the country's financial sector ignored the credit's religious background while resuming in the early 2010s. Islamic banking and finance have recently been introduced to the formal financial industry of the country. If the financial institutions do not address the religious aspects, it becomes a significant societal challenge, causing voluntary credit exclusion. Hence, to increase farmers' confidence, Sharia-compliant credit should be provided to the farmers. As discussed earlier, it has various forms and can work better for agriculture.

Among the various challenges, the difficulty in providing loan security and lengthy procedures were ranked higher by the farmers while using formal agricultural credit. Most of the farmers had trouble providing guarantees and collateral to obtain credit.

The key patterns identified and extracted from the key informants' interviews are farmers' high vulnerability due to production and marketing risk, low productivity, less active real estate market, operational challenges, and societal challenges. These challenges have hampered the expansion of formal credit for farmers in Afghanistan. Low access to credit, in turn, affects farmers' productivity, income and causes them to stay trapped in poverty. The formal credit expansion challenges in the country reinforce themselves and push the poverty trap to endure.

To shatter the vicious cycle of poverty, the Government should enhance its role in agricultural credit. It should establish a unified regulatory and supervisory mechanism that should coordinate and mainstream all formal agricultural credit activities, emphasize financial education to farmers, and stress capacity building in agriculture and Sharia-compliant credit.

Since agriculture is a highly risky venture in Afghanistan, and farmers' productivity is low, the financial institutions should supplement technical assistance to credit provision. They should train farmers in farm management, production techniques, and risk diversification by trained and qualified staff, which can improve credit effectiveness (Arene, 1992; Bashir and Azeem, 2008), and can also be a risk mitigation tool for both financial institutions and farmers. Technical assistance may also help in preventing the misuse of credit.

Since unclear property rights affect farmers'

capability to utilize the land as collateral for credit, registering and formalizing agricultural land can convert this dead capital into living capital. Once registered, the property can be used as collateral for obtaining loans, thus opening an essential means of access to formal credit for agricultural development. Hence, proper measures to protect land rights should be taken. However, this may not come in the short run; therefore, farmers' preferences regarding what type of loan security they can provide need to be explored.

Furthermore, to increase farmers' credit participation, their preferences for the other credit features should also be investigated. For example, farmers' preferences concerning the financial institutions' location, disbursement procedure, ownership and management of the financial institutions, and the repayment terms. Financial institutions should design agricultural credit products based on the revealed farmers' preferences. Therefore, further studies are recommended investigating the preferences of farmers regarding the above-mentioned pertinent features of agricultural credit.

Notes

1) One USD=69.30 AFN.
2) The province and district are with the same name.
3) One Jerib is equal to 0.2 hectares.

References

Abdallah, A.H. (2016a): Does Credit Market Inefficiency Affect Technology Adoption? Evidence from Sub-Saharan Africa, *Agricultural Finance Review*, 76(4), 494-511. https://doi.org/10.1108/AFR-05-2016-0052

Abdallah, A. H. (2016b): Agricultural Credit and Technical Efficiency in Ghana: Is There a Nexus?. *Agricultural Finance Review*, 76(2), 309-324.

Admasu, A. and Paul, I. (2010): Assessment on the Mechanisms and Challenges of Small-scale Agricultural Credit from Commercial Banks in Ethiopia: The Case of ADA'A Liben Woreda Ethiopia. *Journal of sustainable development in Africa*, 12(3), 323-304.

Agricultural Development Fund (2019): *Summary of the National Survey of Agricultural Credit Demand and Supply*. Agricultural Development Fund. Kabul, Afghanistan. https://www.adf-af.org

Ahmad, A. U. F. and Hassan, M. K. (2007): Regulation and Performance of Islamic Banking in Bangladesh. *Thunderbird International Business Review*, 49(2), 251-277.

Akenbor, C. O. (2015): Financial Inclusion and Poverty Trap in Nigeria. *Mustang Journal of Accounting and Finance*, 7, 149-159.

Akram, W. and Hussain, Z. (2008): Agricultural Credit Constraints and Borrowing Behavior of Farmers in Rural Punjab. *European Journal of Scientific Research*, 23, 294-304.

ANDF (2008). *Afghanistan National Development Strategy, Islamic Republic of Afghanistan*. https://reliefweb.int/sites/reliefweb.int/files/resources/6EA9726BF25669E949257466001E94F7-Full_Report.pdf

Arene, C. J. (1992): Loan Repayment and Technical Assistance among Smallholder Maize Farmers in Nigeria. *African Review of Money Finance and Banking*, 1, 63-74.

Asogwa, B.C., Abu, O. and Ochoche, G.E. (2014): Analysis of Peasant Farmers' Access to Agricultural Credit in Benue State, Nigeria. *British Journal of Economics, Management & Trade*, 4(10), 1525-1543.

Attard, A. and Coulson, N. S. (2012): A Thematic Analysis of Patient Communication in Parkinson's Disease Online Support Group Discussion Forums. *Computers in Human Behavior*, 28(2), 500-506.

Ayegba, O. and Ikani, D.I. (2013): An Impact Assessment of Agricultural Credit on Rural Farmers in Nigeria. *Research Journal of Finance and Accounting* 4(18), 80-89

Azimy, M. W., Khan, G. D., Yoshida, Y. and Kawata, K. (2020): Measuring the Impacts of Saffron Production Promotion Measures on Farmers' Policy Acceptance Probability: A Randomized Conjoint Field Experiment in Herat Province, Afghanistan. *Sustainability*, 12(10).

Banerjee, A. V. and Duflo, E. (2007): The Economic Lives of the Poor. *Journal of economic perspectives*, 21(1), 141-168.

Bashir, M. K. and Azeem, M. M. (2008): Agricultural Credit in Pakistan: Constraints and Options. *Pakistan Journal of Life and Social Sciences*, 6(1), 47-49.

Bizhan, N. (2013): Budget Transparency in Afghanistan: A Pathway to Building Public Trust in the State, *Open Budget Survey*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3579750

Bresnyan, E. (2004): *The Consultative Group to Assist the Poor: Addressing Challenges of Globalization-an Independent Evaluation of the World Bank's Approach to Global Programs-Case Study (No. 32911)*. The World Bank.

Castro, E. R. and Teixeira, E. C. (2012): Rural Credit and Agricultural Supply in Brazil. *Agricultural Economics*, 43(3), 293-302.

Central Statistics Organization (2018): *Afghanistan Living Conditions Survey 2016-17*. Kabul, CSO.

Costas, A. and Stachurski, J. (2005): Poverty Traps. *Handbook of economic growth*, 1(Part 1), 295-384.

CSO (2014): *Afghanistan Living Conditions Survey 2013-14. National Risk and Vulnerability Assessment.* Kabul, CSO. https://catalog.ihsn.org/index.php/catalog/6557

DAB (2015): *Banking law of Afghanistan: Da Afghanistan Bank*. Kabul, Afghanistan. https://dab.gov.af/sites/default/files/2018-12/BankingLawofAfghanistanEnglishTranslation227620181134149215533253 25_1.pdf

Dhakshana, A. and Rajandran, K. V. R. (2018): Challenges and Problems on Farmers' Access to Agricultural Credit Facilities in Cauvery Delta, Thanjavur District. *St. Theresa Journal of Humanities and Social Sciences*, 4(1), 50-62.

Diagne, A. (1999): *Determinants of Household Access to and Participation in Formal and Informal Credit Markets in Malawi (FCND Discussion Paper No.67)*. Washington, DC: International Food Policy Research Institute (IFPRI).

Doan, T., Gibson, J. and Holmes, M. (2010): *What Determines Credit Participation and Credit Constraints of the Poor in Peri-urban Areas, Vietnam? (MPRA paper 2750)*. https://mpra.ub.uni-muenchen.de/id/eprint/27509

Dowd, K. (1992): The Monetary Economics of Henry Meulen. *Journal of Money, Credit and Banking*, *24*(2), 173-183.

Foltz, J. D. (2004): Credit Market Access and Profitability in Tunisian Agriculture. *Agricultural Economics*, 30(3), 229-240.

Gashayie, A. avd Singh, M. (2015): Agricultural Finance Constraints and Innovative Models Experience for Ethiopia: Empirical Evidence from Developing Countries. *Research Journal of Finance and Accounting*, 6(7), 39-49.

Gibbs, D. (1986): The Peasant as Counter-revolutionary: The Rural Origins of the Afghan Insurgency. *Studies in Comparative International Development*, 21(1), 36-59.

Gonzalez-Vega, C. (2003): Deepening Rural Financial Markets: Macroeconomic, Policy and Political Dimensions. *Paving the Way Forward for Rural Finance: An International Conference on Best Practices, Washington, DC*, 2-4.

Gravetter, F. J., Wallnau, L. B., Forzano, L. A. B. and Witnauer, J. E. (2016): *Essentials of Statistics for the Behavioral Sciences*. Cengage Learning.

Hartarska, V., Nadolnyak, D. and Shen, X. (2015): Agricultural Credit and Economic Growth in Rural Areas. *Agricultural finance review*,75(3), 302-312.

Hassan, M. T., Atif Sattar, M., Tousif, M. A., Nasir, N., Sadiq, M. and Yasmeen, M. (2012): Role of Islamic Banking in Agriculture Development in Bahawalpur, Pakistan. *International Journal of Learning and Development*, 2(3), 123-138.

Hollinger, F. (2011): Agricultural Finance-Trends, Issues and Challenges. *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)*. GmbH. Bonn, Germany.

Hussain, M. H. (2009): *State of Microfinance in Afghanistan*. (Unpublished) paper prepared for the Institute of Microfinance (InM) as part of the project of Microfinance in SAARC Countries. http://inm.org.bd/wp-content/themes/inm/pdf/Afghanistan.pdf

Jia, X. (2008): *Credit Rationing and Institutional Constraint: Evidence from Rural China (Vol. 59)*. Peter Lang.

Kantor, P. (2009): *From Access to Impact: Microcredit and Rural Livelihoods in Afghanistan*. Afghanistan Research and Evaluation Unit. Kabul.

Kim, D. W., Yu, J. S. and Hassan, M. K. (2018): Financial Inclusion and Economic Growth in OIC Countries. *Research in International Business and Finance*, 43, 1-14.

Kinde, B. A. (2012): Financial Sustainability of Microfinance Institutions (MFIs) in Ethiopia. *European Journal of Business and Management*, 4(15), 1-10.

Llanto, G. M. (2007): Overcoming Obstacles to Agricultural Microfinance: Looking at Broader Issues. *Asian Journal of Agriculture and Development*, 4, 23-40.

MAIL (2018): *National Agricultural Development Framework, Ministry of Agricultural, Irrigation and Livestock*. Ministry of Agriculture, Irrigation, and Livestock, Kabul, Afghanistan. http://extwprlegs1.fao.org/docs/pdf/afg167994.pdf

Maletta, H. (2007): Arable Land Tenure in Afghanistan in the Early Post-Taliban era. *African and Asian Studies*, 6(1·2), 13-52.

Manig, W. (1999): Formal and Informal Credit Markets for Agricultural Development in Developing Countries: The Example of Pakistan. *Journal of Rural Studies*, 6(2), 209-215.

Masaood, M. and Maharjan, K. L. (2020): An Exploration of the Informal Credit Practices for Agriculture in Afghanistan: Reasons for Availing Informal and not Availing Formal Credit. *Journal of International Development and Cooperation*, 261, 95-108.

Meek, G. E., Ozgur, C. and Dunning, K. (2007): Comparison of the t vs. Wilcoxon Signed-rank Test for Likert Scale Data and Small Samples. *Journal of modern applied statistical methods*, 6(1), 10.

Meyer, R. L. (2011): *Subsidies as an Instrument in Agriculture*

Finance: A Review. The World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/12696/707300ESW0P1120ies0as0an0Instrument.pdf?sequence=1

MISFA (2018): *Microfinance Investment Facility for Afghanistan (MISFA) Annual Report*. Kabul. http://www.misfa.org.af/wp-data/uploads/2018/09/201889.pdf

Mohammed, E. Y. and Uraguchi, Z. B. (2017): *Financial Inclusion for Poverty Alleviation: Issues and Case Studies for Sustainable Development*. Routledge.

Mosley, P. (2006): *Finance Against Poverty: Volume 2: Country Case Studies*. Routledge, New York.

MUDH (2017): *Afghanistan Housing Profile*. Ministry of Urban Development and Housing, Government of Islamic Republic of Afghanistan and UN-Habitat. http://www.acbar.org/upload/1494238797113.pdf

Muradi, A. J. and Boz, I. (2018): The Contribution of Agriculture Sector in the Economy of Afghanistan. *International Journal of Scientific Research and Management*, 6(10), 750-755.

Norvell, D. G. (1973): Review of Agricultural Credit in Afghanistan 1954-72. *Small Farmer Credit in West Asia (AID Spring Review Series, Vol. IX, 1973)*.

NRVA (2005): *The National Risk and Vulnerability Assessment*. Central Statistics Organization of Afghanistan. CSO. Kabul, Afghanistan. https://reliefweb.int/sites/reliefweb.int/files/resources/BF0DA64F0CCA5CE4C1257648004551AC-Full_Report.pdf

NSIA (2019): *National Statistics and Information Authority*. Government of Islamic Republic of Afghanistan, Kabul, Afghanistan.

OECD (Organization for Economic Co-operation and Development) (1999): *Agricultural Finance and Credit Infrastructure in Transition Economies: Proceedings of OECD Expert Meeting, Moscow, February 1999*. OECD Publishing.

Pain, A. (2019): *Growing Out of Poverty? Questioning Agricultural Policy in Afghanistan, Afghanistan Analysts Network*. https://www.afghanistan-analysts.org/wp-content/uploads/2019/08/190807_Questioning-Agricultural-Policy-paper.pdf

Parto, S. and Regmi, A. (2008): *A Critical Assessment of Microfinance*. Policy Paper, Afghanistan Public Policy Research Organisation, Kabul.

Pearce (2004): *Making Rural Finance Count for the Poor*. Agriculture and Natural Resource Team, DFID, UK.

Rajeev, M. and Deb, S. (1998): Institutional and Non-institutional Credit in Agriculture: Case Study of Hugli District of West Bengal. *Economic and Political Weekly*, 33, 47-48.

Repullo, R. and Suarez, J. (2000): Entrepreneurial Moral Hazard and Bank Monitoring: A Model of the Credit Channel. *European Economic Review*, 44(10), 1931-1950.

Reyes, A. and Lensink, R. (2010): *Interaction Between Formal and Informal Rural Credit Institutions in Central Chile*. Universidad Santo Tomas. Netherland.

Saiti, B., Afghan, M. and Noordin, N. H. (2018): Financing Agricultural Activities in Afghanistan: A Proposed Salam-based Crowdfunding Structure. *ISRA International Journal of Islamic Finance*, 10(1), 52-61.

Saqib, L. (2011): *Financing Agriculture through Islamic Commercial Transactions (Theory and Practice)*. Lambert Academic Publishing.

Saqib, S. E., Kuwornu, J. K., Panezia, S. and Ali, U. (2018): Factors Determining Subsistence Farmers' Access to Agricultural Credit in Flood-prone Areas of Pakistan. *Kasetsart Journal of Social Sciences*, 39(2), 262-268.

Savage, M., Dougherty, B., Hamza, M., Butterfield, R. and Bharwani, S. (2009): *Socioeconomic Impacts of Climate Change in Afghanistan*. Stockholm Environment Institute: Oxford, UK.

United Nations (2009): Economic Liberalization and Poverty Reduction. *Rethinking Poverty. Reports on the World Social Situation 2010*. United Nations, New York, 97-114. https://www.un.org/esa/socdev/rwss/docs/2010/fullreport.pdf

Vincent, N. E., Muiruri, E. J., Nyangweso, P. M., Langat, B. K. and Kipsat, M. J. (2011): Farmers Inaccessibility to Agricultural Credit in Nyandarua District, Kenya. *Asian Journal of Agriculture and Rural Development*, 1, 64-68.

World Bank (2018): *Afghanistan Overview*. https://www.worldbank.org/en/country/afghanistan/overview

Yaron, J. (2004): From Old to New Roles of Government in Establishing Sound Rural Financial Institutions. *Rural Finance and Credit Infrastructure in China*. Paris, France: OECD.

（2020年10月26日受付）
（2021年1月15日受理）